Mule and Black-tailed Deer

IN BRITISH COLUMBIA

Ecology, Conservation and Management

BRITISH COLUMBIA
Ministry of Environment, Lands and Parks

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Due to a long history of isolation along the Pacific Slope, the blacktail has differentiated from Mule Deer to the extent that it has been called "a species in the making".

INTRODUCTION

Mule and Black-tailed deer are both members of the same species, *Odocoileus hemionus*, yet they are very different from one another. In British Columbia, these two subspecies or races are the most widespread members of the deer family (Cervidae) and probably the most familiar. Although they are at home in remote valleys and wilderness areas, they become quite tame in parks and residential areas where there is no hunting and few large predators. At different seasons, these deer inhabit every kind of ecological zone, from alpine to valley bottom. They have adapted to climates as varied as the benign Gulf Islands and the frigid winters of the Peace River district, and to ecologies as different as dense coastal rainforests and dry interior rangelands.

TAXONOMY

Order
Artiodactyla (Even-toed ungulates)

Family
Cervidae (Moose, Elk, Caribou, Deer)

Genus
Odocoileus

Species
hemionus

Subspecies
columbianus (Columbian Black-tailed Deer)
hemionus (Mule Deer)
sitkensis (Sitka Black-tailed Deer)

EVOLUTION AND APPEARANCE

Black-tailed Deer have been around in North America for over two million years. Mule Deer may have appeared later as a hybrid of Black-tailed and White-tailed deer. Since then, at least seven races or subspecies of Mule and Black-tailed deer have developed. When ice covered British Columbia 18,000 years ago, deer stayed within the southern refugium in the United States. As the ice sheets retreated 15,000 to 10,000 years ago, the Columbian Black-tailed Deer *(Odocoileus hemionus columbianus)* spread northward from Washington State to Vancouver Island and along the coast to southeast Alaska. Mule Deer *(Odocoileus hemionus hemionus)* moved north into the interior. The third subspecies in the province, the Sitka blacktail of the north coast *(Odocoileus hemionus sitkensis)*, is similar to the Columbia blacktail.

The large white rump patch of Mule Deer, narrow black-tipped tail, and large ears (about two-thirds length of the head) are very distinctive.

Mule Deer are relatively large animals – 90 to 95 cm high at the shoulder. Adult males, or bucks, weigh 68 to 113 kg, but bucks in peak physical condition may weigh up to 180 kg. Females, or does, weigh 50 to 75 kg. Mule Deer have a reddish brown coat that changes from tawny brown in summer to dark or grizzled brown in winter. They have a dark brown forehead, a whitish face with a black muzzle, and a white throat patch. Their ears are large – about two-thirds the length of the head – with black borders and white hair on the inside, and they have a large white rump patch with a narrow black-tipped tail. Each year male Mule Deer grow and shed a set of antlers. Their antlers have two main beams, each of which forks again into two beams (dichotomous branching).

Blacktails are smaller than Mule

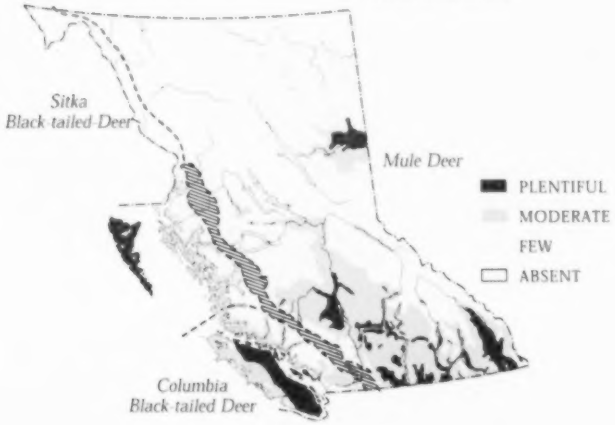
MULE DEER ARE MOST COMMONLY FOUND IN THE DRY VALLEYS AND PLATEAUS OF THE SOUTHERN INTERIOR. *David F. Fraser*

Deer and slightly darker in color, with a small rump patch and a tail that is dark brown or black for most of its length, rather than just at the tip. Adult males in good condition weigh about 48 to 90 kg, females 40 to 65 kg. Sitka blacktails tend to be smaller and darker than Columbia blacktails.

The number of antler points is not a reliable way to determine the age of these deer, but in general, yearling blacktails almost always have unbranched spikes. Two-year-olds mostly have small two-point antlers, but they may also have spikes. Bucks three-years-old and older may have two, three, or four points on each antler. In Mule Deer, most yearlings have two points on each side, and two-year-olds grow large forks or three points. Older bucks have four, five, or more points and a small tine or eye-guard near the base of the antlers.

DISTRIBUTION AND ABUNDANCE

Mule and Black-tailed deer are found only in North America, where they are as typical of the western mountains as whitetails are of the Great Plains and eastern deciduous forests. However, Mule Deer range extends onto the plains in areas of rough terrain such as river breaks and sandhills. Mule and Black-tailed deer occur from northern Mexico to southeast Alaska and southern Yukon and from the Pacific coast to western Manitoba, Kansas, and northwest Texas. Since 1950, the number of Mule Deer in North America has varied from about two to three million (all subspecies) and blacktails from about one to two million (Columbia and Sitka). Black-tailed Deer occur along the entire coast of British Columbia, west of the summit of the Coast and Cascade ranges, and on most coastal islands.



Blacktails are excellent swimmers and inhabit most islands except the more far-flung Queen Charlottes and Dundas group and a few smaller islands closer in. Sitka blacktails were introduced into the Queen Charlotte Islands in the early 1900s and have flourished there because of the lack of predators, except Black Bears, and the mild winters.

Black-tailed Deer numbers vary greatly depending on habitat conditions, the severity of the winters, and the number of predators. However, hunter harvests and other counts indicate that the population in British Columbia has fluctuated between 150,000 and 250,000 in recent decades. Blacktails are abundant in southern areas where the climate is favourable – Vancouver Island, islands in Georgia Strait, and the Sechelt Peninsula. Their numbers decline northward along the mainland coast due to increasing snow depths, except for the Queen Charlotte Islands, where deer densities are high.

The ranges of Black-tailed and Mule deer in British Columbia, particularly in winter, are almost entirely separated by the Coast Range.

The interior of the province has about 165,000 Mule Deer. Most prefer the dry valleys and plateaus of the southern interior, but they are also common in the south-central interior. About 20,000 to 25,000 occupy northern ranges.

In British Columbia, the Coast Range largely separates the ranges of Black-tailed and Mule deer, particularly in winter. Where their ranges meet, these two subspecies will interbreed. As a result, deer in some intermediate valleys have hybrid characteristics.

LIFE HISTORY

During most of the year Black-tailed and Mule deer travel alone or in small groups, but Mule Deer sometimes form larger groups. The social system consists of clans of females that are related to each other by maternal descent and bucks that are not related. Bucks assert their dominance by taking various threat postures and flailing their front hooves. Also, bucks of unequal size, particularly yearlings and two-year-olds, often engage in protracted sparring matches during which they push their antlers together and twist their heads. These engagements are not fights and actually result in social bonding.

Deer communicate with [illegible] aid of scents or pheromones that come from several glands. The most important are the metatarsal (outside of lower leg), tarsal (inside of hock), and interdigital (between the

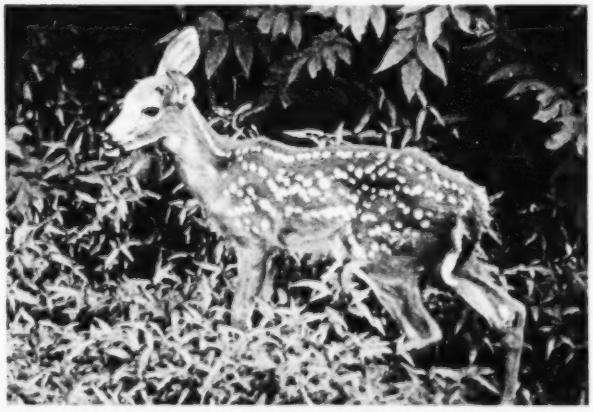
Typically, does produce fawns throughout life, with over 90% of them producing offspring each year.

toes). The metatarsal gland produces an alarm scent, the tarsal serves for mutual recognition, and the interdigital glands leave a scent trail when deer travel.

In the weeks leading up to the late-autumn mating (rutting) period, bucks increase their displays of dominance and indirect threats. A dominant buck typically circles a rival with deliberate steps, back arched, head low, and tail flicking. The subordinate buck frequently bolts away. Bucks also display dominance by violently thrashing the bushes with their antlers. During the rutting season in November and early December, mature bucks of equal size engage in serious head-to-head fights.

Bucks are capable of breeding as yearlings, but older, dominant bucks do most of the mating. Most does breed as yearlings and drop their first fawn on about their second birthday. Females advertise their receptiveness and tend to cluster around the largest bucks. Courtship consists of a tending bond in which a buck keeps other bucks away from the does until they mate or until another buck displaces him. Following the rut, bucks have lost weight and some have wounds or broken antlers, and they tend to hide and rest. They drop their antlers from January to March in British Columbia, and the older bucks shed their antlers first. Bucks regrow their antlers from April through August.

After a gestation period of six to seven months, fawns are born from late-May through June. At this time, the does drive away their offspring of the previous year and seek a secluded place to give birth. The white-spotted fawn relies on its colouration, lack of scent, and silence for protection. Does leave fawns hidden while they forage in the vicinity, returning occasionally to nurse them. Twin fawns are the rule, though young does often have only one, and triplets occur once in a while. At birth, fawns weigh 2.7 to 4 kg. Typically, does produce offspring throughout life, and more than 90 percent of them give birth every year.



THE FAWN RELIES ON ITS CONCEALING COLOURATION, LACK OF SCENT, AND SILENCE FOR PROTECTION *Sean Sharpe*

This is a prolific species which can double its population in a few years under favourable conditions. Normally, 45 to 70 percent of the fawns die, and few Black-tailed and Mule deer live more than eight to ten years. Predation, starvation, and hunting are the main causes of death.

ECOLOGICAL RELATIONSHIPS

Mule and Black-tailed deer have difficulty moving through snow deeper than 30 cm, so they cannot survive in British Columbia's extensive alpine and subalpine zones in winter. In summer, most deer migrate to higher elevations to take advantage of nutritious new growth, but some remain at low elevations all year.

Mule and Black-tailed deer numbers ... can increase greatly where forest fires, logging or other disturbances create openings where food plants are abundant.

Old-growth forests form a key part of the winter range for coastal Black-tailed Deer in British Columbia and are critical for their survival. They provide shelter, intercept snow so that it is shallower, and provide forage in the form of broken branches and the lichens that grow on them. On the southeast coast of Vancouver Island and the islands in Georgia Strait, old-growth cover is not critical because snowfall is usually shallow and brief. But northward and at higher elevations, it becomes increasingly important. Here, steep, south- to west-facing sites provide the best winter range.

In the interior, the Mule Deer's traditional winter ranges consist of shrublands in the dry forest zone and on steep south- and west-facing sites with broken terrain. They often remain at high elevations until December, then migrate to lower ranges with shallower snow. In summer, they usually leave the dry, valley-side ranges and move to moister, higher elevations.

In winter and early spring, coastal Black-tailed Deer feed on Douglas-fir, western redcedar, red huckleberry, salal, deer fern, and lichens that grow on trees. From late spring to fall, they eat a much wider variety of plants, including grasses, trailing blackberry, fireweed, pearly everlasting, and many other herbaceous plants (forbs), as well as the leaves of willows, salmonberry,

salal, maple, and other shrubs or trees. The Mule Deer's key winter foods include shrubs like big sagebrush, pasture sage, bitterbrush, rabbitbrush, snowbrush, saskatoon, rose, and serviceberry, as well as the foliage of Douglas-fir trees and a variety of grasses and herbs. In spring and summer, Mule Deer prefer various grasses, along with herbs like balsamroot, clover, wild strawberry, fireweed, and the leaves of many kinds of shrubs.

Black-tailed Deer share their winter ranges with Roosevelt Elk on the coast. Mule Deer share their ranges with Rocky Mountain Elk, White-tailed Deer, and in the interior, with domestic cattle. Competition with wildlife usually doesn't cause food shortages for Black-tailed Deer, but Mule Deer may face competition from excessive cattle grazing on their winter-spring ranges.

Mule and Black-tailed deer are vital components of their ecosystems and provide food for several predators. The Cougar depends on both species for its survival in British Columbia. Wolf populations in several areas, including Vancouver Island, also rely heavily on deer. Bears, Bobcats, and Coyotes supplement their diets by killing deer when the opportunity arises or by scavenging on carcasses left by Cougars or wolves. Other scavengers include Wolverines, Ravens, and Magpies.

For the most part, Mule and Black-tailed deer live amicably with a number of parasites and disease organisms. These kill deer only when the deer are starving. Epidemic diseases have not caused large die-offs in deer in British Columbia.

VALUES AND USES

In many parts of western North America, native people relied heavily on Black-tailed and Mule deer for food and other products. They used a variety of methods to capture them, including stalking, nets, snares, and driving them into pits or corrals. Archaeological sites in the Gulf of Georgia region contain many tools such as awls, scrapers, wedges, and harpoons made of Black-tailed Deer bone or antler. First Nations people in the interior used Mule Deer extensively, particularly when salmon were scarce.

Thousands of casual contacts between people and deer have considerable intangible value.

Early explorers in British Columbia depended on deer for survival. They killed many in order to provision trading posts and also exported deer hides with other furs. In the late 1800s, market hunters supplied mining camps with deer meat, and many settlers relied on deer for food. Deer meat is still important in the diet of many rural people, including First Nations, but deer are more important today for their recreational and aesthetic value.

BLACK-TAILED DEER OCCUR ALONG THE ENTIRE COAST OF BC AND MAKE FREQUENT USE OF LOGGED HABITATS DURING SPRING AND SUMMER. *BC Gov.*

Since World War II, recreational hunting of Mule and Black-tailed deer in British Columbia has been worth millions of dollars. Deer hunting peaked in the late 1960s, when hunters harvested about 75,000 deer, mostly Mule and Black-tailed. Since that time, harvests have fallen to about 20,000 a year. Over-hunting is not the problem. There are fewer deer harvested now for a number of reasons, including loss of habitat and predation, but also fewer people are hunting, and this trend is likely to continue into the new millennium.

Most British Columbia residents are used to seeing Mule and Black-tailed deer in rural subdivisions, along highways, and in parks. These casual contacts have considerable intangible value, and large groups of Mule Deer on winter-spring ranges are a spectacular sight. The best time for viewing Mule Deer is April, when they move to low-elevation, south-facing grassy slopes in search of the first hints of green vegetation. These locations include slopes along the Fraser River between Lillooet and Williams Lake, the Dewdrop Range near Kamloops, the Gilpin Range between Grand Forks and Christina Lake, and Premier Ridge and other sites along the southern Rocky Mountain Trench.

Black-tailed and Mule deer cause damage to alfalfa fields, landscaping, gardens, and orchards, as well as damage to cars that collide with deer on highways. All these problems are the result of human activities encroaching into former deer habitat.

CONSERVATION

Mule and Black-tailed deer have done fairly well in the face of expanding civilization and are not species at-risk in British Columbia. However, some deer habitat has disappeared permanently because of residential development, particularly on southern Vancouver Island and in the Greater Vancouver area and the Okanagan Valley. Surface mining, hydro reservoirs, highways, and agricultural land development have caused additional habitat loss. As the population of southern British Columbia continues to increase, habitat will go on disappearing slowly but steadily. Some Black-tailed and Mule deer habitats are safe within provincial parks, wildlife management areas, and other reserved lands. Some of these reserves involve land purchases made possible by the Habitat Conservation Trust Fund and the Nature Trust of British Columbia. Other key winter ranges need to be protected or at least managed for the benefit of deer. Assessing the effect of proposed land developments on deer ranges will help to minimize the damage to deer habitat.

Much of the deer range in British Columbia is on Crown lands where forestry and livestock grazing are important land uses. Forestry and deer can co-exist, however, especially if Forest Practices Code regulations succeed in maintaining the old-growth stands deer need for winter range. Initiatives such as handbooks on coordinating timber and deer management on winter ranges in the Cariboo Region and on the south coast should help to reduce the harmful effects of logging on Mule and Black-tailed deer.

Heavy livestock grazing has had detrimental effects on some winter-spring Mule Deer ranges, but many cattle ranges in the southern interior are now covered by coordinated range management plans. However, many spring deer ranges are on private lands that have become less suitable for deer because of heavy grazing by cattle. In these areas, it could be beneficial to provide land owners with more information about the role their lands play in the survival of Mule and Black-tailed deer.

Several thousand Mule and Black-tailed deer die each year on British Columbia roads and highways, and deaths will undoubtedly increase with increased traffic and new highways. This is a serious problem,

MAINTAINING BOTH WINTER AND SPRING RANGE IS CRITICAL TO THE LONG TERM CONSERVATION OF MULE AND BLACK TAILED DEER IN BRITISH COLUMBIA.
Dennis Demarchi

especially where highways cross major winter ranges. Ministry of Transportation and Highways initiatives such as putting up fences with strategically located structures to allow deer to pass through have shown promise on routes such as the Okanagan Connector, and this approach might offer solutions in other problem areas as well.

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